GOVERNMENT OF INDIA
AGRICULTURE
LOK SABHA

UNSTARRED QUESTION NO:6954
ANSWERED ON:13.05.2002
MAPPING OF RICE GENOME
YEMPARALA VENKATESWARA RAO

Will the Minister of AGRICULTURE be pleased to state:

(a) whether a team of scientists has been working to map the rice genome;

(b) if so, the success made so far;

(c) whether any breakthrough has been achieved;

(d) if so, the details thereof; and

(e) the extent to which the scientists in India are geared to exploit the information?

Answer

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI HUKUMDEO NARAYAN YADAV)

(a) Yes, Sir. The Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India has taken action to become a partner of consortium named as International Rice Genome Sequencing Programme (IRGSP). This consortium has ter other member countries besides India which are committed to sequence the entire genome of rice by the year 2003. The Indian initiative for rice genome sequencing is being implemented at the Department of Plant Molecular Biology, University of Delhi, South Campus and National Research Centre for Plant Biotechnology, Indian Agricultural Research Institute, New Delhi.

(b) The Indian scientists have already contributed to the preparation of a genetically anchored physical map of rice genome. By performing more than 100,000 sequencing reactions, data for 4.5 million bases have been generated and 3.2 million bases have already been submitted to the international data base after assembly. The data being generated worldwide including Indian data are being exploited by our scientists for gene discovery and crop improvement.

(c), (d) & (e): A physical map of the region i.e. long arm of the chromosome 11 (57.3 centi Morgan (cM) to 110.1 cM) has been constructed. A complete sequence of rice genome will represent an enormous pool of information for rice improvement through marker-aided selection or genetic transformation. Many new genes have been identified. These genes are to be assigned functions of agricultural importance. For full application of this wealth of information, we have to understand the biological functions encoded by the sequenced DNA.